1.2 Practice WITH CalcChat® AND CalcView®

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In Exercises 1–12, solve the equation. Check your solution. *Examples 1 and 2*

1. $3w + 7 = 19$

2. $2g - 13 = 3$

3. $11 = 12 - q$

4. $10 = 7 - m$

5. $5 = \frac{z}{-4} - 3$

6. $\frac{a}{3} + 4 = 6$

7. $\frac{h + 6}{5} = 2$

8. $\frac{d - 8}{-2} = 12$

9. $12v + 10v + 14 = 80$

10. $24 = 13n - 4n + 9$

11. $3.8y + 5.6y - 2 = 2.7$

12. $\frac{7}{10}c - 8 - \frac{1}{2}c = -16$

13. MODELING REAL LIFE The altitude a (in feet) of a plane t minutes after liftoff is given by $a = 3400t + 600$. How many minutes after liftoff is the plane at an altitude of 21,000 feet?

14. MODELING REAL LIFE A repair bill for a car is \$648.45. The parts cost \$265.95. The labor cost is \$85 per hour. Write and solve an equation to find the number of hours of labor spent repairing the car.

In Exercises 15–22, solve the equation. Check your solution. *Example 3*

15. $4(z + 5) = 32$

16. $-2(4g - 3) = 30$

17. $6 + 5(m + 1) = 26$

18. $5h + 2(11 - h) = -5$

19. $-15 = -6(3 + x) + 4(x - 6)$

20. $1 = 5(r + 9) - 2(1 - r)$

21. $83.8 = 8.6c - 7.3(6 - 2c)$

22. $3y - 2\frac{3}{4}\left(\frac{1}{2}y - 4\right) = -2$

MP NUMBER SENSE In Exercises 23–28, write and solve an equation to find the number.

23. The sum of twice a number and 13 is 75.

24. The difference of three times a number and 4 is −19.

25. Eight plus the quotient of a number and 3 is −2.

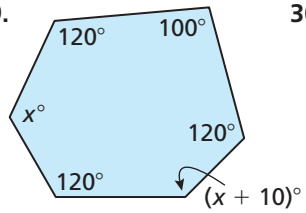
26. The sum of twice a number and half the number is 10.

27. Six times the sum of a number and 15 is −42.

28. Four times the difference of a number and 7 is 12.

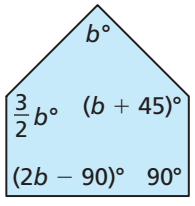
MP USING TOOLS In Exercises 29 and 30, find the value of the variable. Then find the angle measures of the polygon. Use a protractor to check the reasonableness of your answer.

29.



Sum of angle measures: 720°

30.



Sum of angle measures: 540°

ERROR ANALYSIS In Exercises 31 and 32, describe and correct the error in solving the equation.

31.

$$-2(7 - y) + 4 = -4$$
$$-14 - 2y + 4 = -4$$
$$-10 - 2y = -4$$
$$-2y = 6$$
$$y = -3$$

32.

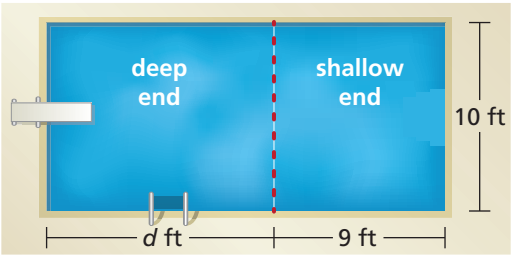
$$\tfrac{1}{4}(x - 2) + 4 = 12$$
$$\tfrac{1}{4}(x - 2) = 8$$
$$x - 2 = 2$$
$$x = 4$$

MODELING REAL LIFE **In Exercises 33–36, write and solve an equation to answer the question.**

Examples 4 and 5

33. During the summer, you work 30 hours per week at a gas station and earn $8.75 per hour. You also work as a landscaper for $11 per hour and can work as many hours as you want. You want to earn a total of $400 per week. How many hours must you work as a landscaper?

34. The area of the surface of the swimming pool is 210 square feet. What is the length of the deep end?

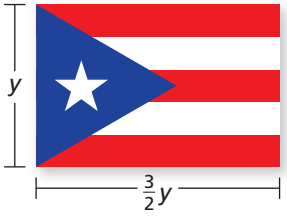


35. Your cell phone has 983.5 MB of free space. You save a 1.4-MB picture and download two songs that are the same size. Your cell phone now has 974.9 MB of free space. What is the size of each song?

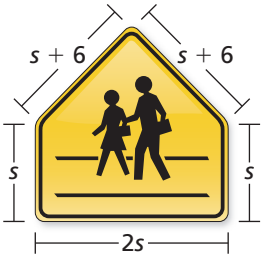
36. You order two tacos and a salad. The salad costs $2.50. You pay 8% sales tax and leave a $3 tip. You pay a total of $13.80. How much does one taco cost?

CONNECTING CONCEPTS **In Exercises 37 and 38, write and solve an equation to answer the question.**

37. The perimeter of the Puerto Rican flag is 150 inches. What are the dimensions of the flag?



38. The perimeter of the school crossing sign is 102 inches. What is the length of each side?



JUSTIFYING STEPS **In Exercises 39 and 40, justify each step of the solution.**

39. $-\frac{1}{2}(5x - 8) - 1 = 6$ Write the equation.

$-\frac{1}{2}(5x - 8) = 7$

$5x - 8 = -14$

$5x = -6$

$x = -\frac{6}{5}$

40. $2(x + 3) + x = -9$ Write the equation.

$2(x) + 2(3) + x = -9$

$2x + 6 + x = -9$

$3x + 6 = -9$

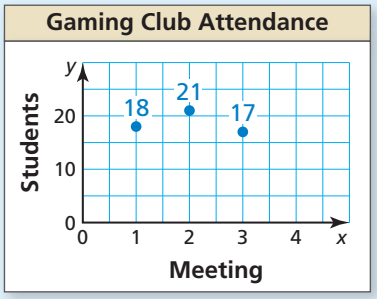
$3x = -15$

$x = -5$

41. COMPARING METHODS Solve the equation $2(4 - 8x) + 6 = -1$ using two different methods. Which method do you prefer? Explain.

42. HOW DO YOU SEE IT?

The scatter plot shows the attendance for each meeting of a gaming club.



a. The mean attendance for the first four meetings is 20. Is the number of students who attended the fourth meeting greater than or less than 20? Explain.

b. Estimate the number of students who attended the fourth meeting. Describe a way you can check your estimate.

43. MP **PROBLEM SOLVING** An online ticket agency charges the amounts shown for basketball tickets. The total cost for an order is $220.70. How many tickets are purchased?

Charge	Amount
Ticket price	$32.50 per ticket
Convenience charge	$3.30 per ticket
Processing charge	$5.90 per order

44. **MAKING AN ARGUMENT** You have quarters and dimes that total $2.80. Your friend says it is possible that the number of quarters is 8 more than the number of dimes. Is your friend correct? Explain.

MP **REASONING** **In Exercises 45–48, the letters a, b, and c represent nonzero constants. Solve the equation for x. Then find values of a, b, and c for which the solution is negative.**

45. $ax - b = 12.5$

46. $ax + b = c$

47. $2bx - bx = -8$

48. $cx - 4b = 5b$

49. DIG DEEPER Find three consecutive even integers that have a sum of 54. Explain your reasoning.

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50. **THOUGHT PROVOKING**
Your math teacher assigns a weight to each component of the class. The weight of the final exam is half your grade, and the weights of the remaining components are equal. What is the least possible score you can receive on the final exam to earn an A (90%) in the class? Explain your reasoning.

Component	Your score	Weight	Score × Weight
Class participation	92%		
Homework	96%		
Quizzes	88%		
Midterm exam	76%		
Final exam			
Total		1	

REVIEW & REFRESH

WATCH

In Exercises 51–54, find the sum or difference.

51. $-3.37 + 4.135$

52. $1\frac{3}{8} - \frac{7}{8}$

53. $18.36 - (-9.04)$

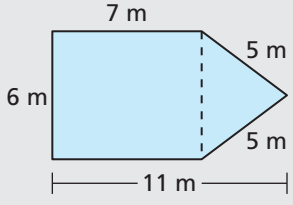
54. $-\frac{5}{12} + \left(-\frac{7}{3}\right)$

55. **MODELING REAL LIFE** About how many times farther from the Sun is Neptune than Mercury?

Planet	Average distance from the Sun (miles)
Mercury	36,000,000
Neptune	2.795×10^9

56. Order the numbers $\frac{11}{20}$, 49%, and 0.5 from least to greatest.

57. Find the perimeter and the area of the figure.



58. MP **NUMBER SENSE** The sum of two-thirds a number and eighteen is twenty-three. What is the number?

In Exercises 59–62, solve the equation. Check your solution.

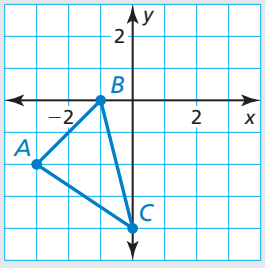
59. $x + 9 = 7$

60. $8.6 = z - 3.8$

61. $3r + 7 = 11$

62. $26 = 9p - 6 - p$

63. Translate the triangle 1 unit right and 3 units up. What are the coordinates of the image?



64. **MODELING REAL LIFE** Your friend borrows $7500 to buy an all-terrain vehicle (ATV). The simple annual interest rate is 6%. She pays off the loan after 5 years of equal monthly payments. How much is each payment?

65. Factor $24x + 32$ using the greatest common factor.